



MATHS

BOOKS - S CHAND IIT JEE

FOUNDATION

**AREA AND PERIMETER OF RECTANGLE,
SQUARE, PARALLELOGRAM, TRIANGLE
AND CIRCLES**

Question Bank 25 M C Q

1. The sides of a triangle are 5, 12 and 13 units. A rectangle of width 10 units is constructed equal in area to the area of the triangle. Then, the perimeter of the rectangle is

- A. 30 units
- B. 26 units
- C. 13 units
- D. 15 units

Answer: B



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2. A square whose side is 2 metres has its corners cut away so as to form an octagon with all sides equal.

Then, the length of each side of the octagon in metres is :

A. $\frac{\sqrt{2}}{\sqrt{2} + 1}$

B. $\frac{2}{\sqrt{2} + 1}$

C. $\frac{2}{\sqrt{2} - 1}$

D. $\frac{\sqrt{2}}{\sqrt{2} - 1}$

Answer: A



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3. The perimeter of a square S_1 is 12 m more than the perimeter of the square S_2 . If the area of S_1 equals three times the area of S_2 minus 11,, then what is the perimeter of S_1 ?

A. 24 m

B. 32 m

C. 36 m

D. 40 m

Answer: B



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4. A square of side x is taken. A rectangle is cut out from this square such that one side of the rectangle is half that of the square and the other is $\frac{1}{3}$ the first side of the rectangle. What is the area of the remaining portion ?

A. $\frac{3}{4}x^2$

B. $\frac{7}{8}x^2$

C. $\frac{11}{12}x^2$

D. $\frac{15}{16}x^2$

Answer: C



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5. A circle is inscribed in an equilateral triangle of side a . What is the area of any square inscribed in the circle ?

A. $\frac{a^2}{3}$

B. $\frac{a^2}{4}$

C. $\frac{a^2}{6}$

D. $\frac{a^2}{8}$

Answer: C



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6. If the distance from the vertex to the centroid of an equilateral triangle is 6 cm, then what is the area of the triangle?

A. 24 cm^2

B. $27\sqrt{3} \text{ cm}^2$

C. 12 cm^2

D. $12\sqrt{3} \text{ cm}^2$

Answer: B



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7. What is the area of the region of the circle which is situated outside the inccribed square of side x ?

A. $(\pi - 2)x^2$

B. $(\pi - 2)x^2 / 2$

C. $2(\pi - 2)x^2$

D. $(\pi - 2)x^2 / 4$

Answer: B



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8. A rectangle field is half as wide as it is long and is completely enclosed by x metre of fencing. What is the area of the field ?

A. $\frac{x^2}{2}m^2$

B. $2x^2m^2$

C. $\frac{2x^2}{9}m^2$

D. $\frac{x^2}{18}m^2$

Answer: D



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9. A square circumscribes a circle and another square is inscribed in this circle with one vertex at the point of contact. The ratio of the

areas of the circumscribed and the inscribed squares is (a) 1 (b) 2 : 1 (c) 3 (d) 4

A. 1 : 2

B. 2 : 1

C. 3 : 1

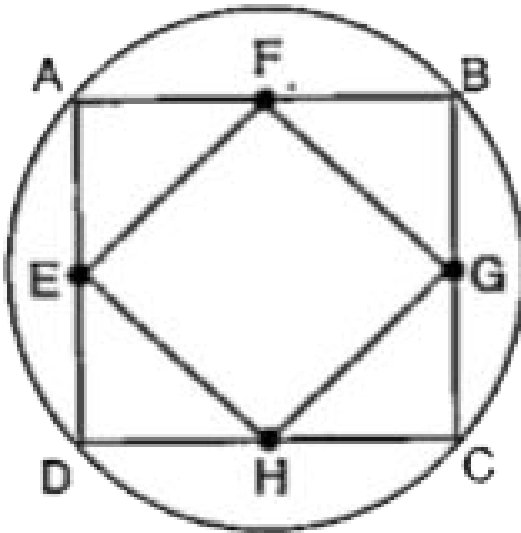
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Answer: B



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10. ABCD is a square inscribed in a circle of radius 14 cm, E,F,G and H are the midpoints of the sides DA, AB, BC and CD respectively. The area of the square EFGH will be



A. 89 cm^2

B. 196 cm^2

C. 98 cm^2

D. 392 cm^2

Answer: B



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11. If an area enclosed by a circle or a square or an equilateral triangle is the same, then the maximum perimeter is possessed by :

A. circle

B. square

C. equilateral triangle

D. triangle and square have equal perimeters greater than that of circle.

Answer: C



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12. A rectangular field is 80 m long and 60 m wide. If fence posts are placed at the corners and are 10 m apart along the 4 sides of the field, how many posts are needed to completely fence the field ?

A. 24

B. 27

C. 28

D. 29

Answer: C



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13. The difference between the area of a square and that of an equilateral triangle on the same base is $\frac{1}{4} \text{ cm}^2$. What is the length of side of triangle ?

A. $(4 - \sqrt{3})^{1/2} \text{ cm}$

B. $(4 + \sqrt{3})^{1/2} \text{ cm}$

C. $(4 - \sqrt{3})^{-1/2} \text{ cm}$

D. $(4 + \sqrt{3})^{-1/2} \text{ cm}$

Answer: C



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14. A rectangle and a parallelogram of equal area and equal base are given. If r and p denote their respective perimeters, then

A. $r = p$

B. $r = 2p$

C. $r > 2p$

D. $r < p$

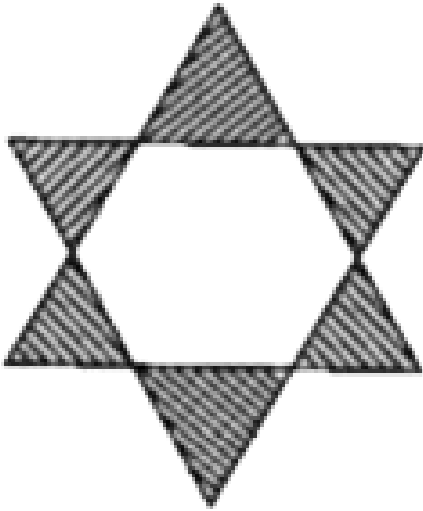
Answer: D



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15. Two cardboard pieces in the form of equilateral triangles having a side of 3 cm each are symmetrically glued to form a regular

star. The area of the star is



A. 4 cm^2

B. 6 cm^2

C. $3\sqrt{3} \text{ cm}^2$

D. $\frac{3\sqrt{3}}{2} \text{ cm}^2$

Answer: C



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